Docket No.: 1594.1291

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re the Application of:

Dae-Sung HAN et al.

Serial No. 10/713,159 Group Art Unit: 3742

Confirmation No. 9459

Filed: November 17, 2003 Examiner: Fuqua, Shawntina T.

For: COOKING APPARATUS

APPEAL BRIEF

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

ATTENTION: MAIL STOP APPEAL BRIEF-PATENTS

In a Notice of Appeal filed October 25, 2005, Applicants appealed the Examiner's June 3, 2005 Office Action finally rejecting claims 1-16. Appellants' brief together with the requisite fee of $500.00 as set forth in 37 C.F.R. § 41.20 is submitted herewith.

I. REAL PARTY IN INTEREST (37 CFR § 41.37(c)(1))

The real party in interest is SAMSUNG ELECTRONICS CO., LTD., the assignee of the subject application.

II. RELATED APPEALS AND INTERFERENCES (37 CFR § 41.37(c)(1)(ii))

Appellants, Appellants' legal representatives, and assignee are not aware of any other appeals or interferences which directly affect or be directly affected by, or having a bearing, on the Board's decision in the pending appeal.

III. STATUS OF CLAIMS (37 CFR § 41.37(c)(1)(iii))

Appealed claims 1-10, 15, and 16 have been rejected. Claims 11-14 have been "objected to."

IV. STATUS OF AMENDMENTS (37 CFR § 41.37(c)(1)(iv))

No amendments were filed subsequent to the Final Office Action mailed June 3, 2005.

V. SUMMARY OF CLAIMED SUBJECT MATTER (37 CFR § 41.37(c)(1)(v))

Cooking apparatuses are appliances which heat and cook food using heat generated by heating units. Some cooking apparatuses directly transmit heat to food to cook the food. The cooking apparatus is provided with a heating unit and a grill unit. The heating unit directly transmits heat to the food. The grill unit is mounted at a predetermined position above the heating unit to support the food so as to be spaced apart from the heating unit.

When heat is generated by the heating unit, thermal energy, such as heat and far infrared rays, is generated. The food laid on the grill unit is heated and cooked by the thermal energy radiated from a front surface of the heating unit. The cooking apparatus equipped with the grill unit has a problem in that heat is directly transmitted from the heating unit to the grill unit, so that the part of food in contact with the grill unit is undesirably burnt, thus deteriorating the taste of the food and negatively affecting people's health.

The present invention, however, relates to cooking apparatuses and, more particularly, to a cooking apparatus which is capable of effectively utilizing heat generated to heat and cook food. Referring to FIGS. 1 through 3, the features of the present invention as set forth in claims 1-16 are summarized below.

As illustrated in FIGS. 1 and 2, a cooking apparatus according to the present invention includes a box-shaped cabinet 10. A plurality of heating units 20 are installed in the cabinet 10 to transmit heat to food to be cooked. A grill unit 30 on which the food is laid is seated on a top surface of the cabinet 10. The cooking apparatus also has a tray 40. The tray 40 collects materials dropping from the food laid on the grill unit 30, such as oil, and guides thermal energy from the heating units 20 to the grill unit 30.

As illustrated in FIG. 3, the cooking apparatus according to the present invention also includes reflecting members 50a, 50b, and 50c. The reflecting members 50a, 50b, and 50c guide thermal energy from a rear surface of each heating unit 20 to the opening 11 over which the food to be cooked is laid.

The far infrared rays generated by each heating unit 20 are repeatedly reflected by the three reflecting members 50a, 50b, and 50c to be guided to the front of the heating unit 20. The heat generated by each heating unit 20 is thus limitedly transmitted to a rear portion of the heating unit 20 due to a heat insulating effect of the air layer provided between the three reflecting members 50a, 50b, and 50c, so most of the thermal energy generated from each heating unit 20 is transmitted to the front of the heating unit 20 and is used to cook food.

Independent claim 1 relates to a cooking apparatus, which comprises "a cabinet opened at a top surface thereof to provide an opening over which food to be cooked is laid" (see element 10 in FIGS. 1 through 3 and paragraphs 0014 through 0015 on page 3 of the Applicants' specification) and "a grill unit seated in the opening of the cabinet so as to support the food over the opening" (see element 30 in FIGS. 1 through 3 and paragraphs 0014 through 0017 on page 3). Claim 1 also includes "a heating unit provided in the cabinet so that a front surface thereof faces the grill unit to radiate thermal energy to the grill unit" (see element 20 in FIGS. 1 through 3 and paragraphs 0014 through 0016 on page 3) and "a plurality of reflecting members provided at predetermined positions around a rear surface of the heating unit, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members" (see elements 50a, 50b, and 50c in FIGS. 2 and 3 and paragraphs 0019 through 0021 on page 4).

Independent claim 4 relates to a cooking apparatus, which comprises "a cabinet to provide an opening over which food to be cooked is laid" (see element 10 in FIGS. 1 through 3 and paragraphs 0014 through 0015 on page 3 of the Applicants' specification), "a tray to removably move in and out of the cabinet through the opening and to be received in a cavity provided in an interior of the cabinet" (see element 40 in FIGS. 1 and 2 and paragraphs 0014

and 0018), and "a grill unit seated in the opening of the cabinet to support the food over the opening" (see element 30 in FIGS. 1 through 3 and paragraphs 0014 through 0017 on page 3). Claim 4 also includes "a plurality of heating units installed in the cabinet to face the grill unit and to transmit thermal energy to the grill unit supporting the food laid thereon" (see element 20 in FIGS. 1 through 3 and paragraphs 0014 through 0016 on page 3) and "a plurality of reflecting members provided at predetermined positions around a rear surface of the heating units, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members" (see elements 50a, 50b, and 50c in FIGS. 2 and 3, and paragraphs 0019 through 0021 on page 4).

Independent claim 16 relates to a cooking apparatus, which comprises "a grill unit seated in the opening of the cabinet to support the food over the opening" (see element 30 in FIGS. 1 through 3 and paragraphs 0014 through 0017 on page 3), "a plurality of heating units installed in the cabinet to face the grill unit and to transmit thermal energy to the grill unit supporting the food laid thereon" (see element 20 in FIGS. 1 through 3 and paragraphs 0014 through 0016 on page 3), and "first, second, and third reflecting members provided at predetermined positions around a rear surface of the heating units" (see elements 50a, 50b, and 50c in FIGS. 2 and 3, and paragraphs 0019 through 0021 on page 4).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL (37 CFR § 41.37(c)(1)(vi))

The grounds of rejection for review are: (1) the rejection of claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Ragland et al. (US 6,104,004); (2) the rejection of claims 4, 5, 7, 8, 15, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Ragland et al. in view of GB 228611 and Huck (US 3,154,004); (3) the rejection of claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Ragland et al. in view of GB 228611 and Huck as applied to claim 4 and further in view of KR-200216089; and (4) the rejection of claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Ragland et al. in view of GB 228611 and Huck as applied to claim 4 and further in view of Hennick (US 5,189,945).

VII. ARGUMENT (37 CFR § 41.37(c)(1)(vii))

In the Final Office Action, the Examiner rejected claims 1-3 under 35 U.S.C. § 102(b) as being anticipated by Ragland et al. (US 6,104,004). The Examiner rejected claims 4, 5, 7, 8, 15, and 16 under 35 U.S.C. § 103(a) as being unpatentable over Ragland et al. in view of GB 228611 and Huck (US 3,154,004).

The Examiner rejected claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Ragland et al. in view of GB 228611 and Huck as applied to claim 4 and further in view of KR-200216089. The Examiner rejected claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Ragland et al. in view of GB 228611 and Huck as applied to claim 4 and further in view of Hennick (US 5,189,945).

Ragland et al.

Ragland teaches an electric barbecue grill having a grill cooking surface 3, an electric heating element 4, multi-layer metal foil inserts 8 and 9 shaped and positioned inside a grill housing to provide reflection of the radiated heat from the heating element 4. Ragland teaches other metal inserts such as a lower insert member 16, an upper insert member 17, and a cover portion 32, which provides the desired reflection and distribution of radiated heat.

GB 228611

GB 228611 teaches a grill having a grid 14 for food to be cooked on and reflectors 24 to reflect heat in the direction of the grid.

Huck

Huck teaches an oven toaster having a toast timing cycle control handle indicated at 28. An on-off switch 26 permits an operator to start the toaster at a desired time, while the handle 28 permits the operator to set the desired degree of toasting by moving the handle 28 (see column 3, lines 15-18).

KR-200216089

KR-200216089 teaches a reflective cooker using far infrared rays to uniformly heat the inside and outside of a food. The far infrared ray emitting body is ceramic.

Hennick

Hennick teaches a water cooled barbecue grill. In use, water is placed in a reservoir chamber 20 of each of housing portions 19 and circulates between the portions 19 through tubes 12. This cools the surface of the tubes 12 so that they remain substantially at or below the boiling point of water.

Claims 1-3

Claim 1 of the present invention relates to a cooking apparatus, which comprises "a plurality of reflecting members provided at predetermined positions around a rear surface of the heating unit, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members" (emphasis added).

In item 9 on page 5 of the Final Office Action mailed June 3, 2005, the Examiner asserts that Ragland teaches in FIG. 1, "three reflectors (8 on right, 8 on left, 16) located below a rear surface of heating element (4)."

Contrary to the Examiner's assertions, Ragland teaches an electric barbeque grill which is configured differently from the claimed cooking apparatus. The inserts (8, 9, 16, 17) and the cover portion 32 of Ragland are not provided at predetermined positions around a rear surface of the heating element 4. The barbecue grill of Ragland is configured such that none of the inserts (8, 9, 16, 17) and the cover portion 32 are positioned in a rear surface of the heating element 4.

Applicants' direct Examiner's attention to column 3, lines 33-35 of Ragland, which clearly teaches that a multilayer metal foil insert is provided in the cover or top of the electric grill and preferable also in the bottom portion of the electric grill. Accordingly, FIGS. 1 and 3 of Ragland teaches that the inserts (8, 9, 16, 17) and the cover portion 32 are positioned **above**, **below**, and **on the side** of the heating element 4. Nothing in the Ragland references teaches that the multilayer metal foil inserts are provided in a **rear** portion of the heating element 4, nor does Ragland define a rear portion of the heating element 4. It is again submitted that none of the inserts (8, 9, 16, 17) and the cover portion 32 are installed to be spaced apart from each other by a predetermined gap to provide an air layer therebetween like the claimed reflecting members as recited in claim 1. Therefore, Ragland does not teach "a plurality of reflecting members provided at predetermined positions around a rear surface of the heating unit, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members" as recited in claim 1 of the present invention.

Claims 2 and 3 depend from claim 1 and patentably distinguish over the cited prior art for at least the same reasons as claim 1.

Claims 4-5, 7-8, 15, and 16

Independent claim 4 recites, "a plurality of reflecting members provided at predetermined positions around a rear surface of the heating units, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members" and independent claim 16 recites, "first, second, and third reflecting members provided at predetermined positions around a rear surface of the heating units."

Ragland fails to teach or suggest the features recited in claims 4 and 16 of the present invention.

Dependent claims 5, 7, 8 and 15 (depending, either directly or indirectly, from claim 4) recite patentably distinguishing features of their own, and, further, are at least patentably distinguishing due to their dependencies from independent claim 4. For example, in contrast to Ragland, GB 228611, and Huck, dependent claim 5 provides, " wherein the thermal heat generated by the heating units is repeatedly reflected by the reflecting members and limitedly transmitted to a portion of the heating units due to a heating insulating effect of the air layer provided between the reflecting members." On page 2 of the Advisory Action mailed September 20, 2005, the Examiner alleges that Ragland teaches an air layer between the inserts 16 since reflector 16 is placed slightly above insert 8. Here, the Examiner relies on broad conclusory statements, subjective belief, and unknown authority because nothing in Ragland teaches or suggests that an air layer is provided between inserts 8 and 16 to produce a heating insulating effect.

Claim 7 teaches that "the heating units are respectively set in both sides of the cavity so that the front surface of the heating units are opposite to each other." The combination of Ragland, GB 228611, and Huck does not teach, "the heating units are respectively set in both sides of the cavity so that the front surface of the heating units are opposite to each other" as recited in claim 7.

Claim 8 teaches that "the heating units are inclinedly arranged to tilt toward the opening to transmit the thermal energy to the grill unit." The combination of Ragland, GB 228611, and Huck does not teach, "the heating units are inclinedly arranged to tilt toward the opening to transmit the thermal energy to the grill unit" as recited in claim 8.

Claim 15 teaches that the cooking apparatus comprises "a timer switch to control an operation time of the heating units; and a power switch to control a heating temperature of the heating units." The combination of Ragland, GB 228611, and Huck does not teach a cooking

apparatus comprising "a timer switch to control an operation time of the heating units; and a power switch to control a heating temperature of the heating units," as recited in claim 15.

Claims 6, 9, and 10

Dependent claims 6, 9, and 10 (depending, either directly or indirectly, from claim 4) recite patentably distinguishing features of their own, and further, are at least patentably distinguishing due to their dependencies from independent claim 4.

Claim 6 teaches that "each of the heating units includes a ceramic member with a heating element to generate the thermal energy." The combination of Ragland, GB 228611, Huck, and KR-200216089 does not teach, "each of the heating units includes a ceramic member with a heating element to generate the thermal energy" as recited in claim 6.

Claim 9 teaches that "the grill unit comprises: a plurality of water tanks seated on both sides of the cabinet to contain water; and a plurality of grill pipes arranged between the water tanks to connect the water tanks to each other, and having hollow structures so that the water is supplied thereto from the water tanks and flows therein." The combination of Ragland, GB 228611, Huck, and Hennick does not teach that "the grill unit comprises: a plurality of water tanks seated on both sides of the cabinet to contain water; and a plurality of grill pipes arranged between the water tanks to connect the water tanks to each other, and having hollow structures so that the water is supplied thereto from the water tanks and flows therein," as recited in claim 9.

Claim 10 teaches that "the grill pipes are continuously cooled by the water supplied by the water tanks, preventing the food supported by the grill pipes from being burnt." The combination of Ragland, GB 228611, Huck, and Hennick does not teach that "the grill pipes are continuously cooled by the water supplied by the water tanks, preventing the food supported by the grill pipes from being burnt," as recited in claim 10.

Suggestion or Motivation To Modify the References

The Examiner's attention is directed to MPEP § 2143.01 which states, "[i]n determining the propriety of the Patent Office case for obviousness..., it is necessary to ascertain whether or not the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the reference before him to make the proposed substitution, combination, or other

modification." *In re Linter*, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. MPEP § 2143.01. Nothing in the cited prior art references teaches or suggests the features as recited in claims 4-10, 15, and 16 of the present invention.

VIII. CONCLUSION

In summary, it is submitted that claims 1-16 patentably distinguish over the prior art. Reversal of the Examiner's rejection is respectfully requested.

* * *

The required fee in the amount of $500.00 is attached. If there are any additional fees associated with the filing of this Appeal Brief, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,
STAAS & HALSEY

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IX. APPENDIX (37 CFR § 41.37(c)(1)(viii))

1. (original) A cooking apparatus, comprising:

a cabinet opened at a top surface thereof to provide an opening over which food to be cooked is laid;

a grill unit seated in the opening of the cabinet so as to support the food over the opening;

a heating unit provided in the cabinet so that a front surface thereof faces the grill unit to radiate thermal energy to the grill unit; and

a plurality of reflecting members provided at predetermined positions around a rear surface of the heating unit, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members.

2. (original) The cooking apparatus according to claim 1, wherein at least one of the reflecting members comprises:

a projection provided at a predetermined portion of the at least one reflecting member, and having an end supported by a neighboring reflecting member so that the at least one reflecting member and the neighboring reflecting member are spaced apart from each other by the predetermined gap.

3. (original) The cooking apparatus according to claim 1, wherein the plurality of reflecting members surround upper, lower, and rear portions of the heating unit, guiding the thermal energy generated from the heating unit to a front of the heating unit.

4. (previously presented) A cooking apparatus, comprising:

a cabinet to provide an opening over which food to be cooked is laid;

a tray to removably move in and out of the cabinet through the opening and to be received in a cavity provided in an interior of the cabinet;

a grill unit seated in the opening of the cabinet to support the food over the opening;

a plurality of heating units installed in the cabinet to face the grill unit and to transmit thermal energy to the grill unit supporting the food laid thereon; and

a plurality of reflecting members provided at predetermined positions around a rear surface of the heatingunits, the reflecting members installed to be spaced apart from each other by a predetermined gap to provide an air layer between the reflecting members.

5. (original) The cooking apparatus according to claim 4, wherein the thermal heat generated by the heating units is repeatedly reflected by the reflecting members and limitedly transmitted to a portion of the heating units due to a heating insulating effect of the air layer provided between the reflecting members.

6. (original) The cooking apparatus according to claim 4, wherein each of the heating units includes a ceramic member with a heating element to generate the thermal energy.

7. (original) The cooking apparatus according to claim 4, wherein the heating units are respectively set in both sides of the cavity so that the front surface of the heating units are opposite to each other.

8. (original) The cooking apparatus according to claim 4, wherein the heating units are inclinedly arranged to tilt toward the opening to transmit the thermal energy to the grill unit.

9. (original) The cooking apparatus according to claim 4, wherein the grill unit comprises:

a plurality of water tanks seated on both sides of the cabinet to contain water; and

a plurality of grill pipes arranged between the water tanks to connect the water tanks to each other, and having hollow structures so that the water is supplied thereto from the water tanks and flows therein.

10. (original) The cooking apparatus according to claim 9, wherein the grill pipes are continuously cooled by the water supplied by the water tanks, preventing the food supported by the grill pipes from being burnt.

11. (original) The cooking apparatus according to claim 10, wherein the tray comprises:

a hump along a central axis thereof; and

reflecting plates provided at both sides of the hump, to reflect the thermal energy from the heating units to the grill unit.

12. (original) The cooking apparatus according to claim 11, wherein the reflecting

plates are respectively provided at predetermined positions below the grill unit to reflect the thermal energy of the heating unit to the grill unit, so that the thermal energy reflected by the heat blocking member is guided to a central portion of the grill unit by the reflecting plates.

13. (original) The cooking apparatus according to 11, further comprising:

oil collecting grooves provided along an edge of the reflecting plates to collect oil dropping from the food which is laid on the grill unit.

14. (original) The cooking apparatus according to claim 13, wherein a predetermined amount of water is contained in the tray to prevent an excessive rise in temperature of the oil collecting groove and the reflecting plates, preventing the oil collected in the oil collecting groove from being burnt and adhered to the tray.

15. (original) The cooking apparatus according to claim 4, further comprising:

a timer switch to control an operation time of the heating units; and

a power switch to control a heating temperature of the heating units.

16. (previously presented) A cooking apparatus having a cabinet to provide an opening over which food to be cooked is laid and a tray to removably move in and out of the cabinet through the opening, the apparatus comprising:

a grill unit seated in the opening of the cabinet to support the food over the opening;

a plurality of heating units installed in the cabinet to face the grill unit and to transmit thermal energy to the grill unit supporting the food laid thereon; and

first, second, and third reflecting members provided at predetermined positions around a rear surface of the heating units.

X. EVIDENCE APPENDIX (37 CFR § 41.37(c)(1)(ix))

(None)